Software Requirements Specification (SRS) for 
"Don't Junk-it List-it" Project 
Submitted to: Clarkton Corporation

Your Ideas, Our Innovation



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# 1. Executive Summary

# 1.1 Project Overview

The "Don't Junk-it List-it" project is an online marketplace platform that enables people and businesses to advertise and sell unwanted car parts. The project's goal is to provide a marketplace platform for used automobile parts online that links buyers and sellers while serving both independent sellers and established automotive parts suppliers. The platform will have powerful order processing and inventory management features.

# 1.2 Purpose and Scope

The "Don't Junk-it List-it" platform's fundamental specifications are outlined in this document. It focuses on the essential features needed for customers to search for and buy parts, sellers to list parts, order administration, and fundamental user management. This specification's main goal is to lay out all the requirements in detail for creating an online market for used car components. To ensure the project's effective implementation, this document specifies the functional and non-functional requirements. The emphasis is on building a user-friendly platform that securely manages user data, offers frictionless access, and streamlines interactions between merchants and buyers.

Out of scope for initial version:

- Advanced seller tools like bulk uploads
- Shipping and logistics management
- Vehicle fitment data and advanced search
- Payments integration
- Discussion forums
- Real-time chat system between buyers and sellers.

# 2. Product Description

#### 2.1 Product Context

The platform is mainly a stand-alone system, although it may connect with social networking platforms for user referrals and marketing purposes as well as with third-party payment gateways. Amazon EC2 cloud servers will be used to host it. The technology stack will consist of Node.js, Express.js, and MongoDB.

#### 2.2 User Characteristics

The platform will have two main user types:

# **Buyers:**

- Vehicle owners looking for used parts to fix or upgrade their cars.
- Prefers buying used items to reduce environmental impact.
- Hands-on with automotive parts and comfortable buying used parts online.
- Seeking deals on specific parts they need for DIY repairs/mods.

# **Sellers:**



- Can be individuals cleaning garages or professional used parts vendors
- Interested in monetizing old auto parts taking up space
- Don't want the hassle of selling on classifieds/forums
- Limited technical sophistication; will need simple listing tools
- Prefers buying used items to reduce environmental impact.

# 2.3 Assumptions

- Sellers will manually enter details about each part they list including descriptions, attributes, photos, pricing etc.
- Buyers will primarily search parts by providing basic filters like make, model, year, part names etc.
- Payments will be handled offline in the initial version. Buyers and sellers will connect via email/phone for payments and logistics.

#### 2.4 Constraints

- Budget for initial development is limited to \$250,000
- Timeline for launch is within 3.5 months

# 2.5 Dependencies

 None initially. After launch, may integrate with payment gateways, shipping providers, vehicle data sources etc.

# 3. Functional Requirements

100	Functional Requirements Tracker			
Feature No.	Feature Name	Priority	Description	
FR-01	User Account Management	High	Enables users to create and manage their accounts	
FR-02	Seller Inventory Management	High	Sellers list and manage automotive parts.	
FR-03	Search and Browse Parts	High	Facilitate search and view functionalities for parts.	
FR-04	Shopping Cart	High	Manage part selections in a cart.	
FR-05	Checkout and Order	High	Oversee buying process and orders for	
	Management		users.	
FR-06	Ratings and Reviews	Medium	Allow rating and reviewing for	
			parts/sellers post-purchase.	
FR-07	Content Pages	Medium	Include static pages for platform-	
			related needs.	

## 3.1. User Account Management

✓ Feature Number: FR-01

✓ Feature Name: User Account Management

✓ Priority: High

✓ **Description:** Enable sellers and buyers to create and manage their accounts on the platform



# ✓ Stimulus Sequences:

- User clicks on "Sign Up" or "Register".
- System prompts the user to input required details (name, email, and password).
- User submits the information.
- System validates the data and creates the user account.

#### ✓ Requirements

- FR-01.1: User registration with name, email, and password.
- FR-01.2: Ability for users to edit profile and update settings.
- FR-01.3: Reset password functionality.
- FR-01.4: Email verification for new accounts.

## **3.2 Seller Inventory Management**

- ✓ Feature Number: FR-02
- ✓ Feature Name: Seller Inventory Management
- ✓ Priority: High
- ✓ **Description:** Allows sellers to list and manage their automotive parts on the platform.
- ✓ Stimulus Sequences:
  - Seller clicks on "Add New Part".
  - System prompts seller to input part details.
  - Seller submits the details.
  - System validates and adds the part to the seller's inventory.

#### ✓ Requirements

• FR-02.1: Capability for sellers to add new parts with details like name, description, attributes (size, colour), photos, videos, price, etc.

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- FR-02.2: Inventory tracking to display quantity available.
- FR-02.3: Sellers can edit or delete their part listings.

#### 3.3 Search and Browse Parts

- ✓ Feature Number: FR-03
- ✓ Feature Name: Search and Browse Parts
- ✓ Priority: High
- ✓ Description: Provide functionalities for buyers to search and view parts available
- ✓ Stimulus Sequences:
  - Buyer types in the search bar or selects filters.
  - System displays relevant part listings based on the query.
  - Buyer selects a part to view detailed information.

## ✓ Requirements

- FR-03.1: Implement a search bar to look up parts using keywords.
- FR-03.2: Filtering options based on attributes like make, model, year, and category.
- FR-03.3: Detailed part pages with complete information and seller details.

## 3.4 Shopping Cart

- ✓ Feature Number: FR-04
- √ Feature Name: Shopping Cart
- ✓ Priority: High
- ✓ **Description:** Facilitate buyers to add parts to their cart and manage selections.
- ✓ Stimulus Sequences:



- Buyer selects a part and clicks on "Add to Cart".
- System adds the part to the cart.
- Buyer accesses the cart to view selected items.

#### ✓ Requirements:

- FR-04.1: Ability for buyers to add parts to their cart.
- FR-04.2: View cart with a summary of selected items and total costs.
- FR-04.3: Options to save the cart for later, adjust quantities, or remove items.

# 3.5 Checkout and Order Management

- ✓ Feature Number: FR-05
- ✓ Feature Name: Checkout and Order Management
- ✓ Priority: High
- ✓ **Description:** Enable the buying process and order management for both sellers and buyers.
- ✓ Stimulus Sequences:
  - Buyer clicks on "Checkout".
  - System prompts for necessary details and payment information.
  - After successful payment, the order is placed.

# ✓ Requirements:

- FR-05.1: Smooth checkout process capturing necessary details.
- FR-05.2: Order status tracking from pending to completed or cancelled.
- FR-05.3: Buyers can view their order history and current status.
- FR-05.4: Sellers can view and manage received orders.

#### 3.6 Ratings and Reviews

- **✓ Feature Number:** FR-06
- ✓ Feature Name: Ratings and Reviews
- ✓ Priority: Medium
- ✓ **Description:** Post-purchase, allow buyers to rate and review parts or sellers.
- ✓ Stimulus Sequences:
  - Buyer selects a past purchase.
  - System provides options to rate and write a review.
  - Buyer submits the review.
  - System displays the review on the seller's/part's page.

# ✓ Requirements

- FR-06.1: Buyers can rate parts or sellers post-purchase.
- FR-06.2: Display average ratings and individual reviews for parts/sellers.

## 3.7 Content Pages

- ✓ Feature Number: FR-07
- √ Feature Name: Content Pages
- ✓ Priority: Medium
- ✓ **Description:** Have static pages to support various platform needs and announcements
- ✓ Stimulus Sequences:
  - User clicks on a static page link (e.g., "About Us").
  - System displays the selected content page.

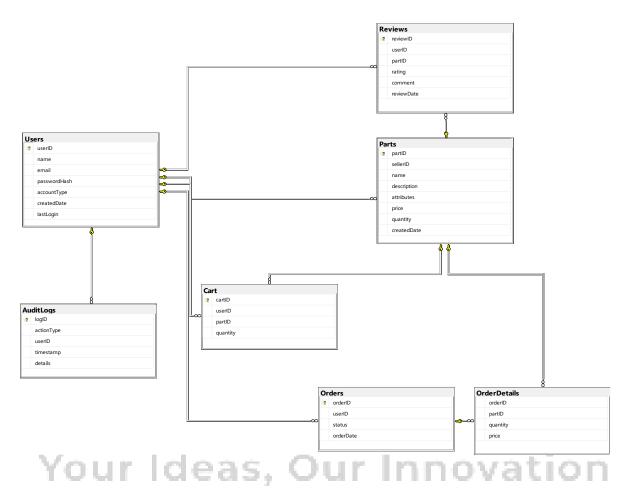
## ✓ Requirements

FR-07.1: Static pages including but not limited to About Us, Contact, and FAQs.



• FR-07.2: A dedicated blog or announcements section for platform updates and news.

# 4. Data Requirements



**Users Table:** This table will store general information about the registered users. Allows creation, editing, and management of accounts.

Field	Data Type	Description
userID	INT (PK)	Unique identifier for each user
name	VARCHAR(255)	Name of the user
email	VARCHAR(255)	Email address of the user
passwordHash	VARCHAR(255)	Hashed version of the user password
accountType	ENUM	'buyer' or 'seller'
createdDate	DATE	Date when the account was created
lastLogin	DATE	Last login date of the user

Parts Table: This table will store information about automotive parts.

Field	Data Type	Description
partID	INT (PK)	A unique identifier for each part
sellerID	INT (FK)	Reference to Users table (userType: Seller)



name	VARCHAR(255)	Name of the part
description	TEXT	Description about the part
attributes	JSON	Attributes like size, color, model, etc.
quantityAvailable	INT	Number of parts available
price	DECIMAL(10,2)	Price of the part

**Cart Table:** This table will store the items added to cart.

Field	Data Type	Description
cartID	INT (PK)	A unique identifier for each cart item
buyerID	INT (FK)	Reference to Users table (userType: Buyer)
partID	INT (FK)	Reference to Parts table
quantity	INT	Quantity of the part added to cart

**Orders Table:** This table will store the order details of parts.

Field	Data Type	Description
orderID	INT (PK)	Unique identifier for each order
userID	INT (FK)	Refers to userID from Users table
status	ENUM	'pending', 'completed', 'cancelled', etc.
orderDate	DATE	Date when the order was placed

OrderDetails Table: This table will map the parts to an order.

Field	Data Type	Description
orderID	INT (FK)	Refers to orderID from Orders table
partID	INT (FK)	Refers to partID from Parts table
quantity	INT	Number of parts of this type in the order
price	DECIMAL(10,2)	Price of the part at the time of ordering

**Reviews Table:** This table will store reviews given by buyers.

Field	Data Type	Description
reviewID	INT (PK)	Unique identifier for each review
userID	INT (FK)	Refers to userID from Users table
partID	INT (FK)	Refers to partID from Parts table
rating	DECIMAL(2,1)	Rating given, e.g. 4.5
comment	TEXT	Detailed review comment
reviewDate	DATE	Date when the review was posted

ContentPages Table: To manage Content Management System dynamically

Field	Data Type	Description
pageID	INT (PK)	Unique identifier for each content page
pageTitle	VARCHAR(255)	Title of the content page
pageContent	TEXT	Content of the page



lastUpdatedDate	DATE	Last time the content was updated
lastopaatcabatc	DAIL	Last time the content was apaated

# AuditLogs Table: To manage Compliance

Field	Data Type	Description
logID	INT (PK)	Unique identifier for each log
actionType	VARCHAR(255)	Type of action performed (data deletion, etc.)
userID	INT (FK)	Refers to userID from Users table
timestamp	TIMESTAMP	Exact time of the action

# **5. Non-Functional Requirements**

Non Functional Requirements Tracker						
Feature No.	Feature Name	Priority	Description			
NFR-01	Security	High	Ensure that all user interactions and data exchanges			
			within the platform are secure.			
NFR-02	Performance	High	Ensure smooth, efficient, and speedy interactions for			
		_	the users.			
NFR-03	Operational	Medium	Guarantee consistent uptime and scalability to			
THE REAL PROPERTY.			handle traffic.			
NFR-04	Compliance	Medium	Maintain transparency and respect for user data.			

# 5.1 Security

- ✓ Feature Number: NFR-01✓ Feature Name: Security
- ✓ Priority: High
- ✓ **Description:** Ensure that all user interactions and data exchanges within the platform are secure.
- ✓ Stimulus Sequences:
  - User accesses the website > SSL encryption ensures secure data transmission.
  - User registers/logs in > Passwords are hashed and salted for storage.
- ✓ Requirements
  - NFR-01.1: Implement SSL encryption for data transmission.
  - NFR-01.2: Use advanced algorithms for password hashing and salting.
  - NFR-01.3: Prevention mechanisms for SQL and other injection attacks.
  - NFR-01.4: Role-based access control.
  - NFR-01.5: Store encrypted session tokens.

#### 5.2 Performance

- ✓ Feature Number: NFR-02✓ Feature Name: Performance
- ✓ Priority: High
- ✓ **Description:** Ensure smooth, efficient, and speedy interactions for the users.



## ✓ Stimulus Sequences:

- User opens the web page > Page loads in defined time.
- User conducts a search > Results are displayed within defined time.

#### ✓ Requirements

- NFR-02.1: Pages load within 3 seconds (1 second for cached).
- NFR-02.2: System supports up to 50 concurrent users.
- NFR-02.3: Search results in under 5 seconds.
- NFR-02.4: Database writes average below 100ms.

## 5.3 Operational

- ✓ Feature Number: NFR-03
- ✓ Feature Name: Operational
- ✓ Priority: Medium
- ✓ **Description:** Guarantee consistent uptime and scalability to handle traffic.
- ✓ Stimulus Sequences:
  - Traffic increases > Auto-scaling ensures service remains operational.
  - System failure > Backup or secondary system takes over.

# ✓ Requirements

- NFR-03.1: Cloud hosting with auto-scaling.
- NFR-03.2: High availability architecture.
- NFR-03.3: Daily data backups.
- NFR-03.4: Performance metrics through load testing.

# 5.4 Compliance

- ✓ Feature Number: NFR-04
- ✓ Feature Name: Compliance
- ✓ Priority: Medium
- ✓ Description: Maintain transparency and respect for user data.
- ✓ Stimulus Sequences: \_\_\_\_\_\_
  - User requests data deletion > System deletes respective data.
  - User registers > System ensures data is not shared/sold.

#### ✓ Requirements

- NFR-04.1: Compliance with data usage.
- NFR-04.2: Mechanism for account closure or data deletion.
- NFR-04.3: Non-sharing of user data with third parties.

# **6. External Interface Requirements**

#### **6.1 User Interfaces:**

The user interfaces of the "Don't Junk It - List It" platform are designed to be intuitive and user-friendly, catering to both buyers and sellers. The following forms and interfaces are part of the system:

## User Registration Form:

✓ The platform will provide a registration form to the users when they first visit the platform.



- ✓ This form allows user to provide a valid email address and a secure password.
- ✓ This form also provides additional fields for user details such as name, contact number, and address.
- ✓ This form includes validation checks to ensure the entered data is accurate.

#### Login Form:

- ✓ Registered users can log into their accounts using a login form.
- ✓ The form requires users to enter their email address and password.
- Proper authentication mechanisms are in place to verify the user's identity securely.

## Part Listing Form:

- ✓ Sellers are provided with a form to create listings for automotive parts.
- ✓ The form includes fields for part name, condition (new, used, refurbished), price, location (city, state), detailed description, and images of the part.
- ✓ Sellers can upload multiple images to showcase the part from different angles.
- ✓ The form allows sellers to edit or delete their listings if needed.

## Messaging Interface:

- ✓ Users and sellers can communicate through an internal messaging system.
- ✓ Conversations are organized, allowing users to view sent and received messages.
- ✓ Users receive notifications for new messages and replies.

#### 6.2 Hardware Interfaces:

The system is designed in such a way that it can be accessible through a standard web browser that is compatible with various devices such as computers, laptops, tablets, and smartphones. Users can access the platform using popular web browsers such as Google Chrome, Mozilla Firefox, Apple Safari, and Microsoft Edge.

#### **6.3 Software Interfaces:**

# Compatibility with Web Browsers:

- ✓ The platform is compatible with common web browsers, including Google Chrome, Mozilla Firefox, Apple Safari, and Microsoft Edge.
- ✓ The user interface is optimized to render properly on these browsers, ensuring a consistent experience for all users.

# Secure Payment Gateways:

- ✓ The platform integrates with secure payment gateways (e.g., PayPal, Stripe) to facilitate secure and seamless transactions.
- ✓ Buyers can make payments for purchased parts using various payment methods, including credit/debit cards and online payment systems.
- ✓ Integration with payment gateways ensures that sensitive financial information is encrypted and protected during transactions.

## **6.4 Communication Interfaces:**

#### Secure HTTPS Protocol:



- ✓ The platform employs the HTTPS protocol to encrypt data transmitted between users' devices and the server.
- ✓ Encryption ensures that data, including user credentials and payment information, remains confidential and secure during transmission.

#### **Email Notifications:**

- ✓ Users receive email notifications for account-related activities, such as account registration, password reset requests, and listing updates.
- ✓ Additionally, users are notified via email when they receive new messages from other users or sellers on the platform.
- ✓ Email notifications are sent using secure email protocols to protect the integrity and confidentiality of the messages.

# 7. Other Non-functional Requirements

## 7.1 Compliance with Data Protection Laws:

User Consent: During registration, the users can look into the data usage policies of the platform and are asked to explicitly provide their consent to process their personal data.

Data Encryption: Sensitive user data including their login credentials and payment records are encrypted using standard protocols. Additionally, the data that is stored in the databases Is also encrypted protect from any cyber-attacks.

Access Control: Only authorized staff can access user data. Access control mechanisms are used to make sure that the employees can only access the data that is required to their roles.

User Rights: The platform enables users to learn about their rights to access their data, can correct inaccurate information, can delete their data, and oppose to certain data processing operations.

# 7.2 Regular Backups:

Scheduled Backups: To preserve the most recent data changes, the database is regularly backed up at scheduled intervals (for example, daily or monthly).

Redundant Storage: Data is stored in secure and alternative locations away from the main server to prevent data loss in the event of any failures.

Data Restoration: In case of data loss, the system can be restored quickly to its previous state using backup data.

# 7.3 Security Testing:

Regular Security Audits: Regular security audits and vulnerability assessments are performed to identify and address new threats and vulnerabilities.

Penetration Testing: Periodic penetration testing is conducted to simulate real-world cyberattacks and assess the platform's ability to withstand such attacks. Findings from penetration tests are used to further enhance the platform's security measures.



# 8. System Models

## 8.1 Use case Diagram

#### Actors:

- Guest Users
- Registered Users
- Sellers
- Buyers
- Administrators

#### Use Cases:

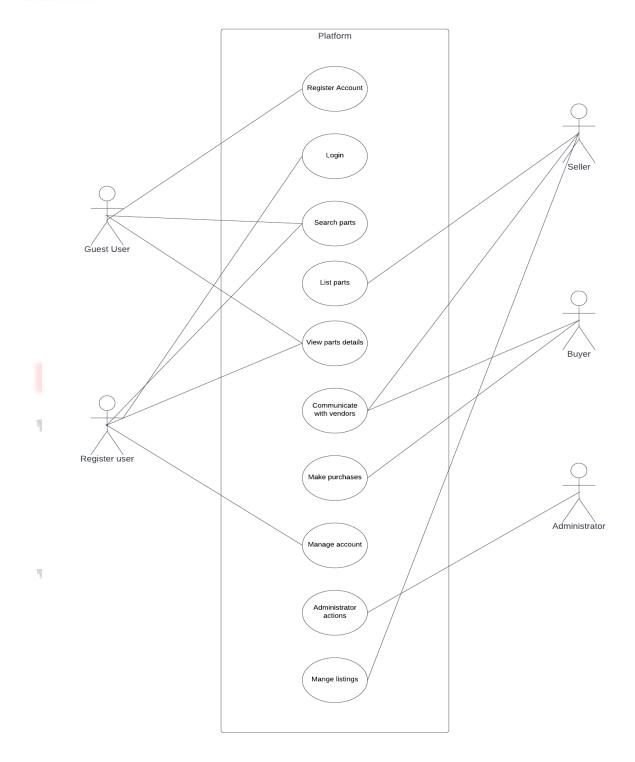
- Register Account
- Login
- Search parts
- View part details
- List parts
- Communicate with seller
- Make purchase
- Manage account
- Manage listings
- Administrator actions

# Relationships:

- ✓ Registered User is associated with Login, Search Parts, View Part Details, Communicate with Seller, Make Purchase, Manage Account, and Manage Listings use cases.
- ✓ Guest User is associated with Register Account and Search Parts use cases.
- ✓ Seller is associated with List Part, View Part Details, Communicate with Seller, and Manage Listings use cases.
- ✓ Buyer is associated with Search Parts, View Part Details, Communicate with Seller, and Make Purchase use cases.
- ✓ Administrator is associated with Administrator Actions, which includes a range of administrative duties related to user administration and resolving disputes.

Use case diagram:

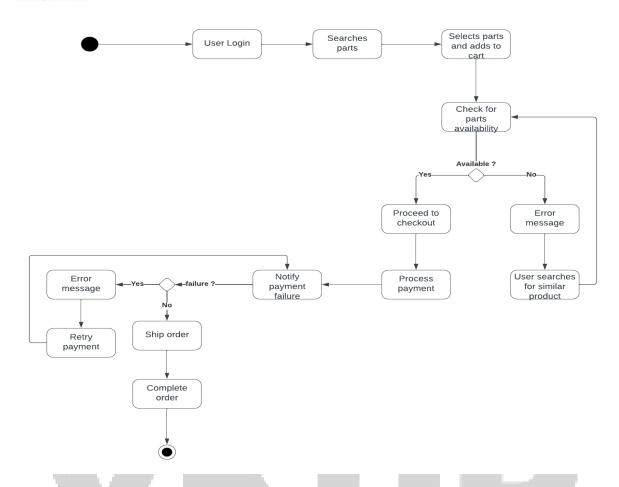




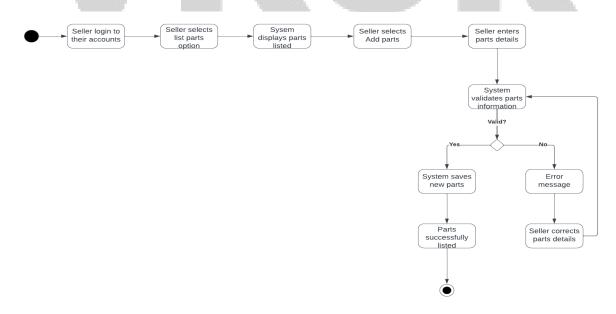
# **8.2 Activity Diagram**

The following is the Activity diagram for the Purchase processing which involves users.





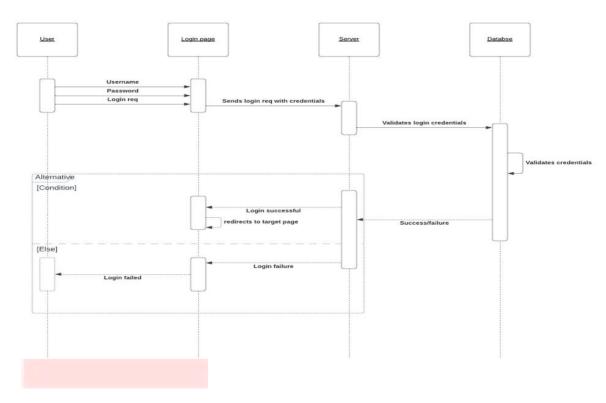
The following is the Activity diagram for listing parts which involves seller.



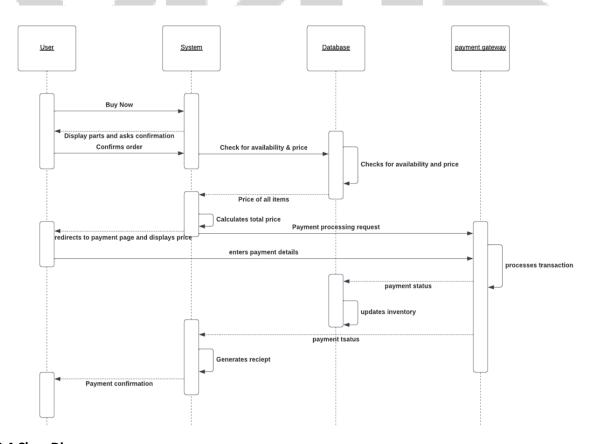
# 8.3 Sequence Diagram

The following is the sequence diagram for login page.





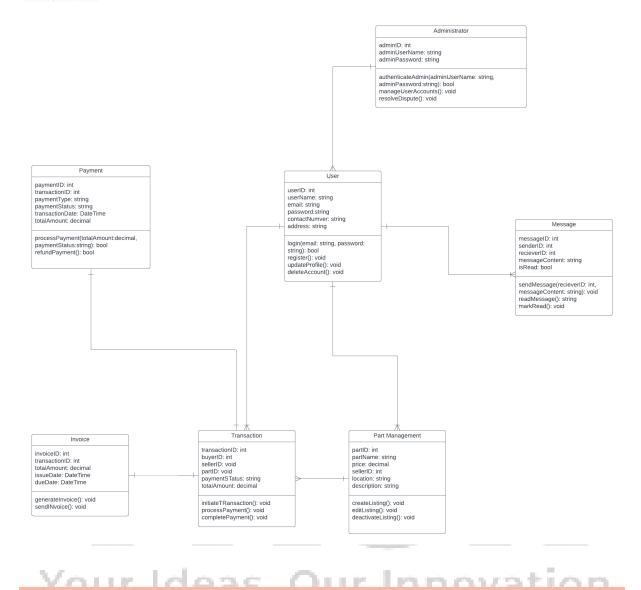
The following is the sequence diagram for purchase processing.



# 8.4 Class Diagram

The following is the class diagram for the given system.





# 9. Requirements Confirmation/Stakeholder Sign-off

Ensuring the accuracy and completeness of the requirements is crucial before moving into the design and development phases of the project. This section provides a platform for stakeholders to review, confirm, and sign off on the listed requirements.

#### 9.1 Review Process:

- 1. **Document Distribution:** All stakeholders will be provided with a copy of the Software Requirements Specification (SRS) document.
- 2. **Feedback Collection:** Stakeholders are expected to review the SRS and provide feedback, comments, or suggest modifications if needed.
- 3. **Resolution Meetings:** If discrepancies or disagreements arise, resolution meetings will be conducted to address concerns and reach a consensus.
- 4. Finalization: Post the review and necessary revisions, the SRS will be finalized.

## 9.2 Sign-off:



The sign-off process indicates that the stakeholder has reviewed the SRS, agrees with the contents, and gives the green light for the project to move to the next phase.

For the sign-off, each primary stakeholder should provide:

- Name
- Role/Title
- Signature
- Date

This ensures accountability and agreement on the project's direction.

Stakeholder Name	Role/Title	Signature	Date

#### 9.3 Notes:

- 1. If there are subsequent changes or additions to the requirements after the sign-off, they will go through a formal change management process. This ensures traceability and proper documentation.
- 2. It's recommended that stakeholders keep a copy of the signed SRS for their records.
- 3. If a stakeholder is unavailable for sign-off, a proxy or representative should be appointed to sign on their behalf, ensuring no delays in the project timeline.

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